



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,690	10/18/2000	Mats A. Brenner	A13-26546US	4875
128	7590	05/10/2005	EXAMINER	
HONEYWELL INTERNATIONAL INC.			TRAN, KHAI	
101 COLUMBIA ROAD			ART UNIT	
P O BOX 2245			PAPER NUMBER	
MORRISTOWN, NJ 07962-2245			2637	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/691,690

Applicant(s)

BRENNER, MATS A.

Examiner

KHAI TRAN

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 17-22, 32-36, 44 and 45 is/are rejected.
- 7) ☒ Claim(s) 6-16, 23-31, 37-43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The amendment filed 12/13/2004 has been entered. Claims 1-45 are pending in this Office action.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 17-22, 32-36, 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (U.S. Pat. 5,729,571) in view of Cahn et al (U.S. Pat. 6,198,765).

Regarding claim 1, Park et al disclose a digital receiver of a spread spectrum communication system, comprising: a correlator that determines a plurality of correlation measurement at points along a correlation curve, wherein each correlation measurement is based upon a correlation between a received satellite and a reference signal (Figures 1-2B showing correlators 115, 116, 117 which correlate a reference generated from a reference PN code generator 143 with a received spread signal from antenna 201); a signal distortion detector that determines difference between the correlation measurements along the correlation curve and that detects a signal distortion from the differences (adders 229, 230, 231 and comparators 238, 239, 240 and a synchronization detecting circuit 242 for determining differences between the

Art Unit: 2637

correlations of late, early and puncture values). Park et al fail to explicitly disclose the apparatus used for detecting of positioning system satellite signal distortions.

Cahn et al disclose a spread spectrum receiver comprising a plurality of correlators 240, 243, 246 correlating reference signal and a received signal and the spread spectrum receiver used in GPS navigation system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform a GPS system as taught by Cahn et al into the teachings of in the spread spectrum receiver of Park et al in order to determine the position information from the GPS satellite transmitter and tracking of the code and carrier phase estimates by distorting the correlation functions used is such tracking (col. 2, line 16-29).

Regarding claim 2, Park et al also disclose wherein each of the correlation measurements represents a different time shift between the reference and the satellite signal (the PN code generator receives a single chip-delay PN code to the correlators, col. 5, lines 34-50).

Regarding claims 3-5, Park et al disclose the different time shift being early time shift and late time shift (because the PN code generator receives a single chip-delay PN code to the correlators, col. 5, lines 34-50, thus generating early time shift and late time shift).

Regarding claims 17-18, Park et al disclose the spread spectrum receiver, as shown in Figures 1-3B, comprising: correlators 217-222 for correlating the transmitted signal with a first reference signal for generating a first correlation signal; correlating the transmitted signal with a second reference signal for generating a second correlation

Art Unit: 2637

signal; correlating the transmitted signal with a third reference in order to determine a third correlation signal; a use of adders 229, 230, 231 for determining a first difference from the first and second correlation measurements; determining a second difference from the second and third correlation measurements; determining a third difference from the first and the third correlation signals and directly comparing the third difference to a third threshold; a use of comparators 238, 239, 240 for directly comparing the first difference to a first threshold (, an adaptive threshold control 249); detecting a signal distortion in the satellite based on the comparisons of the first and second difference (an OR gate 241, and SYNC detector 242). Park et al fail to explicitly disclose the apparatus used for detecting of positioning system satellite signal distortions. Cahn et al disclose a spread spectrum receiver comprising a plurality of correlators 240, 243, 246 correlating reference signal and a received signal and the spread spectrum receiver used in GPS navigation system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform a GPS system as taught by Cahn et al into the teachings of in the spread spectrum receiver of Park et al in order to determine the position information from the GPS satellite transmitter and tracking of the code and carrier phase estimates by distorting the correlation functions used is such tracking (col. 2, line 16-29).

Claims 19-22 are similar to claims 2-5. Therefore, claims 19-22 are rejected under a similar rationale.

Claims 32-36 are similar to claims 17-22. Therefore, claims 32-36 are rejected under a similar rationale.

Claims 44-45 are similar to claims 19-22. Therefore, claims 44-45 are rejected under a similar rationale.

***Allowable Subject Matter.***

4. Claims 6-16, 23-31, 37-43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

5. Applicant's arguments filed 12/13/2004 have been fully considered but they are not persuasive.

Applicant states that the Park patent and Cahn et al do not disclose a signal distortion detector that determines differences between correlation measurements along a correlation curve in order to detect positioning system satellite signal distortion as recited in claim 1.

In response to the Applicant's argument that Cahn et al discloses a spread spectrum receiver comprising a plurality of correlators 240, 243, 246 which each correlates reference signal and a received signal and for generating different correlation measurements and these correlation measurements are compared by residual code phase error detector for generating a distortion signal (see Figure 14).

Applicant asserts that the Park patent does not determine a first difference between first and second correlation measurements and a second difference between second and third correlation measurements.

In response to the Applicant's argument that Park patent discloses a plurality of correlators 217-222 as shown in Figures 1-3B for correlating the transmitted signal with a first reference signal for generating a first correlation signal; correlating the transmitted signal with a second reference signal for generating a second correlation signal and so on wherein the first and second correlations are different measurements.

Applicant asserts that in the independent claim 32, neither Park patent and nor the Cahn patent discloses forming three or more correlation measurements, determining a single value from the three or more correlation measurements, and comparing the single value to a threshold.

In response to the Applicant's argument that Park patent discloses the correlation measurements are output from the correlators 115, 116, 117, 123, 124 ... and are compared with the threshold value by using an adder 135 as shown in Figure 1.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2637

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KHAI TRAN  
Primary Examiner  
Art Unit 2637

KT  
September 3, 2004